Leveraging the Microsoft Bot Framework to build your own Sitecore enabled bots

Robbert Hock & Alex van Wolferen
May 18th 2017
Amsterdam / The Netherlands
Who are we?

Robbert Hock
Freelance Senior Sitecore Specialist
Kayee
@kayeeNL

Alex van Wolferen
Senior Sitecore Architect
Suneco
@avwolferen
Agenda

• Microsoft Bot Framework
• SUGCON Bot
• LUIS
• Connecting Sitecore with the Bot framework
Why bots?
The bot landscape
Microsoft CEO Satya Nadella “Bots are the new apps”
Microsoft Bot Framework

Your bots — wherever your users are talking.

Build and connect intelligent bots to interact with your users naturally wherever they are, from text/sms to Skype, Slack, Office 365 mail and other popular services.

Get started

https://dev.botframework.com/
We have created a bot for you!

We have added a few hundred if-statements...
Microsoft Bot Framework - Architecture

1. Build a great bot
2. Add smarts to your bot
3. Make your bot discoverable
4. Connect your bot to channels

Conversation as a Platform

Microsoft Bot Connector

Microsoft Bot Directory

Intelligence & Knowledge

Public APIs (Cognitive Services)
- Language
- Speech
- Knowledge
- Web Search
- Vision
- ML
- ...

Private APIs
- Knowledge & Action Graph
- Entity
- Dialog Manager

Microsoft Bot Builder (SDKs)
Microsoft Bot Framework - Architecture

1. Build a great bot
2. Add smarts to your bot
3. Make your bot discoverable
4. Connect your bot to channels

Conversation as a Platform

Microsoft Bot Connector

Microsoft Bot Directory

Intelligence & Knowledge

Public APIs (Cognitive Services)
- Language
- Speech
- Knowledge
- Web Search
- Vision
- ML
- ...

Private APIs
- Knowledge & Action Graph
- Entity
- Dialog Manager

Microsoft Bot Builder (SDKs)
SDK’s C#, Node.js, Azure Bot Service

Bot Framework Documentation

Overview

Developing Bots

Intelligence

Resources

Build bots with C#
Learn how to build bots with the Bot Builder SDK for .NET.

Build bots with Node.js
Learn how to build bots with the Bot Builder SDK for Node.js.

Build bots with Azure Bot Service
Learn how to build bots with the Azure Bot Service.

Build bots with REST
Learn how to build bots with the Bot Framework REST APIs.

Deploy bots
Learn about the different ways you can deploy bots.

Reference
Explore the Bot Framework reference documentation.
Bot Framework Emulator

We have great sessions on azure

5/18/2017 (13:35-14:20) - A futuristic showcase of the omni-channel capabilities of Sitecore XP - [Bas Lijsten - Rob Hakken]

5/18/2017 (14:40-15:25) - Leveraging the Microsoft Bot Framework to build your own Sitecore enabled bots - [Robert Hock - Alex van Wolferen]

5/19/2017 (08:35-09:20) - What's new in Publishing Service v2.0 - [Stephan Pope]

[Image of the Bot Framework Emulator interface with sessions listed]

© 2017 Sitecore User Group Conference Europe and its respective speakers. All rights reserved.
What is a Bot, technically speaking? C# edition

- Microsoft Bot Builder SDK
- Messages API that handles activities
  - Message
  - Contact Relation Update
  - Conversation Update
  - Typing
  - Ping
  - End of Conversation
  - Trigger
  - Event
  - Invoke
  - Delete User Data
• Dialogs are the key of success to Bots
• Break up conversations into smaller pieces
• Follow the Single Responsibility Principle
• Must implement the IDialog interface
  • Task StartAsync(IDialogContext context)
• Located in the Microsoft.Bot.Builder.Dialogs namespace
• Must be serializable
Echo Bot

BLA

BLA
SUGCON Bot
Introducing the SUGCON Europe 2017 bot

WebChat

http://www.sugcon.eu/bot/

Skype

https://join.skype.com/bot/120f1168-77bd-48f3-8baa-c78d81aba458

Facebook Messenger

https://www.messenger.com/t/1208427272620146
Adding Cognitive Services to your bot

<table>
<thead>
<tr>
<th>Vision</th>
<th>Speech</th>
<th>Language</th>
<th>Knowledge</th>
<th>Search</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Vision</td>
<td>Custom Recognition</td>
<td>Bing Spell Check</td>
<td>Academic Knowledge</td>
<td>Bing Web Search</td>
</tr>
<tr>
<td>Emotion</td>
<td>Speaker Recognition</td>
<td>Linguistic Analysis</td>
<td>Entity Linking</td>
<td>Bing Image Search</td>
</tr>
<tr>
<td>Face</td>
<td>Speech</td>
<td>Language Understanding</td>
<td>Knowledge Exploration</td>
<td>Bing Video Search</td>
</tr>
<tr>
<td>Video</td>
<td>Translator</td>
<td>Text Analytics</td>
<td>Recommendations</td>
<td>Bing News Search</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WebLM</td>
<td></td>
<td>Bing Autosuggest</td>
</tr>
</tbody>
</table>

microsoft.com/cognitive
LUIS (Language Understanding Intelligence Service)

Overview

Facts & statistics about the app's data and the received endpoints at any period of time... Learn more

Dashboard  Suggested utterances

App Id: 07b06373-9949-4b5e-b7a5-a3397f6fb754

You don’t have to create all your entities from scratch. Check out a list of prebuilt entities for common knowledge concepts (e.g. date & time, numbers, temperature, percentage, etc.). Consider using these ready-made entities in your model rather than creating them by hand.

Add prebuilt entities  Next tip

App status

Last train: May 7, 2017, 10:41:30 PM  Last published: May 7, 2017, 10:09:56 PM

Intent Count  Entity Count  List Entity Count  Labeled Utterances Count
12 / 80  9 / 30  0 / 50  396

© 2017 Sitecore User Group Conference Europe and its respective speakers. All rights reserved.
Microsoft Bot Framework
Ultimate Goal

• Create a conversational Bot that integrates with the whole Experience Platform from a visitor perspective

• Challenges?
  • Create demo site with reasonable interaction needs
  • 8.2 u3 didn’t have xConnect
  • Way too time consuming to create required stack to replace xConnect
  • Create several API’s
New Goal

• Create conversational Bot that communicates with Sitecore from a operational perspective

• Challenges?
  • Create a authentication mechanism between the Bot and Sitecore
  • Create several API’s
    • Authentication, UserManagement, Indexing, Publishing, XDB, Logging
• Create a multi dialog conversational Bot (CaaP)
• Authenticate Bot user with Sitecore
• Create several API’s for access to Sitecore functionality
• Make use of LUIS for understanding what the user wants and to break up the intents
• Make use of FormFlow for conversation guidance
• Make use of Application Insights REST Api
Microsoft Bot Framework and Sitecore

- LUIS Model
  - 19 intents
  - 6 entities
  - 105 labeled utterances

- Multi Dialog
  - Authentication
  - User Management
  - xDB
  - Publishing
  - Indexing
  - Application Insights
Authentication with Sitecore
• User in conversation needs to be authenticated
• IDialogContext (IBotData)
  • Get/SetUserData
  • Get/SetConversationData
  • Get/SetPrivateConversationData
  • DeleteStateForUser
Authentication with Sitecore from Bot
Authentication with Sitecore from Bot

1. AccessToken InValid
2. Forward conversation to AuthenticationDialog
3. Reply message and call LogIn
4. Trade conversation reference for a login ticket with API build in Sitecore environment
5. Redirect the user from conversation to Bot Authentication form in Sitecore environment
6. Authenticate the user
7. Perform a callback from Sitecore environment to dedicated API in Bot
8. Authenticate the user in the conversation (SetPrivateConversationData)
9. User is authenticated for a certain amount of time; User can logout;

Keep calm and Bot on!
Authentication with Sitecore from Bot
Sitecore Bot Demo
FormFlow

Natural guidance and help...
More options with less effort!
FormFlow - More Options with Less Effort

- Provides clear guidance and help
- Understands both numbers and textual entries
- Gives feedback on what is understood and not
- Asks clarifying questions when needed
- Allows navigating between steps
- Messages during the process of filling in a form.
- Custom prompts per field.

- Templates to use when automatically generating prompts or help.
- Terms to match on.
- Whether to show choices and numbers or not.
- Fields that are optional.
- Conditional fields.
- Value validation
- Binds to a model
FormFlow

```java
[Serializable]
public class CreateUser
{
    [Pattern("^\([\w-]+(\:[\w-]+)*\)\([^\w-]+(\:[\w-]+)*\[0,66]\)\([^a-z]{2,6}(\:[\w-]{2})?\)\]"
    public string EmailAddress;
    public string FullName;
    [Pattern("^[a-zA-Z0-9]+$")]
    public string UserName;
    public List<UserRole> UserRoles;
    public bool? AdministratorRoleForUser;
    public bool? EmailSendWithPasswordToTheUser;

    public static IForm<CreateUser> BuildForm()
    {
        var form = new FormBuilder<CreateUser>();
        .Message("Let's get some more details for the user!");


        return form.Build();
    }
}
```
BUILD 2017 BOT Framework announcements

New – Cortana, Bing and Skype for Business Channels

Custom Skills
- Memory / Profile
- Speech

Business Bots
- Top Bots
- Bots in Bing Search

LOB Bots
- IT Managed
- Integrated Auth
Adaptive Cards

Open Framework
Multiple Canvases

Card created: Publish Adaptive Card schema
Miguel Garcia
Created Monday, February 13, 2017 10:00:32 PM

Now that we have defined the main rules and features of the format, we need to produce a schema and publish it to GitHub. This schema will be the starting point of our reference documentation.

Board: Adaptive Card
List: Backlog
Assigned to: David Chase
Due date: Not set

Set due date
Comment
View

Card Created: Publish Adaptive Card schema
Miguel Garcia
Created Monday, February 13, 2017 10:00:32 PM

Now that we have defined the main rules and features of the format, we need to produce a schema and publish it to GitHub. This schema will be the starting point of our reference documentation.

Board: Adaptive Card
List: Backlog
Assigned to: David Chase
Due date: Not set

Set due date
Comment
View

Card Created: Publish Adaptive Card schema
Miguel Garcia
Created Monday, February 13, 2017 10:00:32 PM

Now that we have defined the main rules and features of the format, we need to produce a schema and publish it to GitHub. This schema will be the starting point of our reference documentation.

Board: Adaptive Card
List: Backlog
Assigned to: David Chase
Due date: Not set

Set due date
Comment
View

Notification
Microsoft Teams
Skype
Android
iOS
Sitecore integration with Microsoft Cognitive Services

Mark Stiles
Sitecore MVP & Principal Developer - @Velir
@maaakstiles
Thank you!

Contact us at:
@kayeeNL
@avwolferen